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Special Service Department

Stark Bro's Nurseries & Orchards Co

Louisiana, Missouri

One-Year Trees

U.S. DEPARTMENT OF AGRICULTURE
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1911



One-year apple trees as we grow them. The illustration, made from a photograph, shows Stark Delicious trees in the 3 one-year sizes and tells a stronger story than could be put in words, of the remarkable Stark whole-root system and splendid top growth that make for tree perfection

One Year Trees

NEXT in importance to the selection of those varieties that will yield the greatest net return on his investment and labor, the orchardist is confronted with the problem of deciding on the material from which his orchard foundation is to be built. Shall it be one-year or older trees?

The purpose of this bulletin is to answer that question, and in so doing to present such authoritative information and facts, as to leave in the planter's mind a clear-cut understanding of the merits of one-year, as compared with older trees.

For many years Stark Bro's have advocated the planting of one-year trees, especially apple. Extensive experimental work conducted by us in our own orchards, as well as that carried on by horticulturists and orchardists in all parts of the country, has convinced us and many others that the one-year tree, given the care and attention it should have, will in the long run, in most localities, make a better orchard tree than will a tree older than one year.

Adding to the knowledge gained from this experimental work, the result of the experience of orchardists in those famous fruit-growing valleys lying west of the Rocky Mountains, and in other fruit-growing regions, where a tree older than one year can scarcely be given away, the argument in favor of the one-year tree is complete.

Briefly, its merits are these:—

It is cheaper to buy—a fact of importance, since it lessens the planter's original investment.

It is planted more cheaply than the larger, bulkier tree, older than one year.

It withstands much better the shock of being taken up from the nursery, packing and shipping to some far-distant point, and transplanting to its permanent home in the orchard.

When transplanted in the orchard, it takes hold rapidly in its new surroundings; the roots become firmly established sooner and a healthy, vigorous growth sets in more quickly.

The future frame-work of the one-year tree may be placed exactly where the grower wishes it. Being in the form of a straight whip, with no branches, the one-year tree develops its branches after it is planted in its permanent place in the orchard, instead of in the nursery, as is the case with older trees. Thus by proper pruning, the head or frame-work of the tree can be made to take the shape or form desired by its owner, or to suit the conditions under which it must grow. This is a point of great importance and is one of the strongest arguments in favor of the one-year tree.

The one-year tree will, in most localities, come into bearing as young as the older tree. In many instances it has been known to bear earlier. In any locality it will live as long or longer, bear as much fruit and make a better orchard tree.

That our best horticulturists and most progressive orchardists look with favor on one-year trees is evidenced by the following letters. These letters came to us in response to an inquiry asking for their expert opinion on this important subject.

From Horticulturists

MR. W. P. STARK,
Louisiana, Mo.,

Dear Mr. Stark—Some years ago the Experiment Station sent out 2,500 circular letters to Missouri orchardists asking for their experience with regard to planting one-year-old or two-year-old trees. About one-fourth of them said unconditionally they would prefer to plant one-year-old trees. Nearly all of the three-fourths who said they would prefer two-year olds made this statement conditional. Many of them said they would prefer one-year-old trees, provided they could get large one-year olds, but would usually prefer to risk the larger two-year-old tree, for the reason that they could not always secure large one-year olds. The sum total of their reports indicated that if the one-year-old trees were large and well grown they gave results superior to two-year olds. In our own experience at the Experiment Station, we prefer one-year-old trees, provided we can get them well grown and 4 feet or upwards in height. If one-year olds are less than 3 feet in height, we would prefer two-year-old trees. The one-year-old trees can be headed at any height which the planter desires. They can subsequently be pruned and shaped at the will of the planter without

interfering with a frame-work which has previously been formed in the nursery. They can be handled and planted with much less labor. They occasionally wilt less, and are far less liable to lean or to have their roots loosened in wet, windy times than are the bigger two-year olds. They can more readily be cultivated close the first year without barking limbs already formed. Two-year olds well branched when shipped are likely to have their branches more or less broken in handling, even though the best care is taken in packing, shipping and planting. With one-year olds there is no such danger. On well-grown one-year olds a better root system can always be secured in proportion to the tree. I believe that apple-growers have preferred two-year olds. It is largely because under neglect the one-year old is more likely to be overgrown by weeds or too much shaded by corn or other crops, if the latter are planted too close to the tree. In no case, however, should weeds be allowed to grow around the trees the first year, nor should corn be planted close enough to shade one-year-old trees. I do not think a two-year-old tree should be chosen simply because it is big enough to better avoid being over-topped by weeds or encroaching crops. It is our belief here at the Station that the one-year-old tree is the better, most economical, and the safer tree to plant. Yours very truly,

J. C. WHITTEN,

(Professor of Horticulture, University of Missouri, COLUMBIA, Mo.)

My dear Mr. Stark—Replying to your inquiry in regard to one-year-old apple trees, I fully agree with you in regard to the advisability of planting one-year-old stock. In answering the many inquiries on this subject received at this office, my advice is always in favor of the one-year tree, especially if stock is well grown and on sound, healthy roots. Fully 90 per cent of all the apple trees now planted for commercial purposes are of this age. The low-headed tree is now almost universally preferred and the one-year-old tree affords the best conditions for forming such head and the shock in transplanting is much less than in older trees and the ease and facility of handling and cost of trees and transportation are important items. From observation and experience, I am decidedly in favor of one-year-old trees.

Yours very truly,
G. B. BRACKETT, U. S. Pomologist.

Dear Mr. Stark—During a recent trip through the far western states and British Columbia I have seen thousands of apple orchards and in nearly every case they have been grown from one-year-old trees. The growers seem to prefer them to those of any other age and I do not wonder at it when I see the orchards. The fruit here at the Third National Apple Show, where I am now, judging the exhibits, are abundant evidence of the success that such trees are when grown to bearing age. They surely live well and make thrifty trees if well cared for. The cost of the original trees is less than that of two-year-olds and the freight and cost of planting is a little less. Thrifty stock one-year-olds are what the western growers plant, and the same should be planted far more commonly in the East. Yours very truly, H. E. VAN DEMAN, ex-U. S. Pomologist and Chief Judge of the Third National Apple Show, Spokane, Wash.

Gentlemen—You are right in educating people to plant one-year apple trees. I have advocated it for years. One gets better root system in a one-year tree, than at any other age unless they are transplanted every year in the nursery, and the public will not pay the nurseryman for the extra work involved. With the general tendency to lower headed trees, there are many different views as to form and shape of tree to be desired; then different orchard locations require somewhat different types of trees, and the planter who has the good sense to buy one-year trees can rear and build up a far more suitable tree for his purpose than would be possible with the older nursery made trees, for, bad as it may sound, there are a whole lot of nurserymen who are not orchardists. One-year trees pack together, arrive in better order, and at less freight and express cost to planter; they sell for less money, and so the planter can afford to buy a few more than he wants, and by planting the surplus in missing rows, 3 to 5 feet apart and transplanting each year, he always has stock on hand to replace any failure in the orchard, right Johnnie on the spot, and that's a big point in successful orcharding. Very truly yours, J. H. HALE (the Peach King), SOUTH GLASTONBURY, CONN.

My dear Mr. Stark—Naturally, I am very much in favor of yearling trees but it seems to be difficult to get them in Ohio. There is no question but what they are the best trees to plant when well grown. I am sure that the same arguments for the planting of one-year trees in all portions of the West will hold good in Ohio, the principal one being that the future frame-work of the tree may be placed exactly where the grower wishes it. With older trees this is quite impossible; many broken mature trees result from using a head that is formed in the nursery when trees are older than one year. I am certainly very much in favor of using yearling trees of all kinds. Sincerely yours, WENDELL PADDOCK, COLUMBUS, OHIO (Author "Fruit Growing in Arid Regions" and Professor of Horticulture, Ohio State University.)

Gentlemen—What I shall say regarding the planting of one-year-old apple trees, will be the result of comparatively little experience but a great deal of observation. I believe that the one-year-old trees could be used universally with greater success than the two-year olds. Were I planting again, I should certainly use the one-year trees, provided I could get them of good size—say from 3 to 4 feet in height. I used several as replants in my orchard and they did very well indeed. I believe the average workman who is planting trees would get the one-year olds in the ground in much better condition than the larger two-year olds. It is difficult to get them in and properly protect the roots of two-year-old trees while planting, but I found where smaller trees are being handled the men do not mind scraping away the loose earth with a foot and dragging some soil over the roots of the trees during the time which intervenes while the hole is being dug and made ready for receiving the tree. Where it is necessary to use the shovel for heeling in the trees where they are to be protected only for a few minutes, the heeling in will not be done. Every experienced orchardist knows the value of protecting the roots of trees when they are being planted, and anything we can do to encourage this needed protection will increase the percentage of trees that live and do well.

There was a time when people argued in favor of two-year-old trees because they were more conspicuous and easier seen after being planted, and hence were not so liable to be injured in cultivating the orchard. To-day, we expect to get our orchard lands in good enough order before setting any trees to enable us to plant any size we like and still be able to see them while cultivating. By using one-year-old trees, there would be great saving in freight charges and large numbers of trees could be handled between the station and the orchard with greater ease. I am willing to advocate the planting of strong, vigorous, one-year-old apple trees. Yours very truly, W. L. HOWARD (Secretary Missouri State Board of Horticulture, and Professor of Horticulture, Missouri State University, COLUMBIA, Mo.)

Gentlemen—I most certainly favor the planting of one-year-old budded apple trees, so that they may be headed low and all orchard operations may be easily performed. I find that one-year-old trees will bear as early in the orchard as trees two or three years old when planted. Under separate cover, I am sending you my bulletin on apple culture, which gives my reasons in better form than I am giving them in this letter. Yours very truly, C. P. CLOSE (State Horticulturist, Maryland Agricultural Experiment Station, COLLEGE PARK, MD.)

(We quote in full from the Maryland Agricultural Experiment Station Bulletin No. 144, written by Mr. Close, the matter on one-year apple trees and which appears under the heading "Age and Kind of Nursery Tree for Planting.")

"The writer prefers above all others a well-grown one-year-old budded tree. A one-year-old tree may be headed low and the first crop of branches may be used for the foundation branches, selecting those best placed. Nurserymen usually cut these off in growing higher-headed trees. Unless a two-year-old tree has been headed low in the nursery it is usually necessary to force the development of new foundation branches low on the trunk and these are not always well placed. Furthermore, a one-year-old tree is cheaper than a two-year-old tree."

Gentlemen—The sentiment which years ago favored "sky scraper" style of apple trees is changing wonderfully fast, and the prevailing sentiment to-day is for one-year trees—the heads of which can be controlled and made to resist sweeping winds. My own observation and experience have taught the wisdom of the adoption of this course in all future plantings. Very truly yours,
S. D. WILLARD, GENEVA N. Y.

From Orchardists

COLORADO. I think one-year-old trees are the best in all my planting. I planted all two-year until the last lot. Two years ago I bought from you one-year-old Grimes and they are fine. They are lower headed than the two-year-old trees.—JACOB HEBERLING, Delta County.

IDAHO. Would not plant trees older than one year; have one-year trees planted in 1905 as large now as two-year trees planted in 1903.—N. C. THOMPSON, Kootenai County.

INDIANA. You ask about one-year trees. I think they are decidedly the best, but as with all others they need careful setting and cultivation. One-year trees for me, first, last and all the time.—R. H. PICKEL, Knox County.

MONTANA. I spent most of my life near the great nursery district of New York, where the two-year-old apple tree was the only standard tree to plant, but I believe a good strong one-year-old tree is the only thing for the Northwest.—T. R. PLUMB, Carbon County.

MONTANA. In planting a large tract, I would only plant one-year-old apple trees and never more than two-year-olds.—JOHN MILLER, Ravalli County.

NEW MEXICO. Two-year trees, in my experience, for small planting are very desirable for this section. For large plantings I would prefer one-year trees—they are so much easier handled. In this valley one-year trees take hold and grow just as readily as two-year trees.—ARCH. MCGREGOR, Grant County.

NEW MEXICO. I have set both one- and two-year trees, and consider the one-year far superior to the two-year, especially for the southwest, and more especially New Mexico. I set trees from you two years ago and the seasons have been dry ever since they were set out, and there are 95 per cent of them living. Under the conditions, I couldn't have expected any of them to have lived. I can recommend your trees to all who contemplate setting an orchard.—E. A. HYSO, Quay County.

NORTH CAROLINA. Last April I purchased six hundred of the most perfect one-year-old trees from you I have ever seen; set them out the 19th of April and never lost a tree. I headed my trees back to 22 inches and this year got a growth of from 3 to 5 feet.—R. W. MARTIN, Mitchell County.

OHIO. One-year trees are coming in favor. They make a tree just as quickly but require greater care at first. One advantage is, they can be headed to suit the grower. We head our trees low and try to have branches come nearly to the ground. This protects the tree, kills the grass and renders much cultivation or mulching unnecessary. This we regard as of the greatest importance.—J. W. GARBER, Prop. Alta Vista Fruit Farm, Richland County.

VIRGINIA. With my experience I am in favor of one-year trees rather than the two-year or three-year trees. In my own orchard the one-year trees have done much better than the two-year.—PHILIP SHADE, Frederick County.

WASHINGTON. Advise everyone to set yearlings, no matter how small. Two years ago Stark Bro's sent me two-year-old trees when I ordered yearlings. They threw in gratis quite a bunch of small yearlings from 12 to 18 inches in height (the two-year-olds were 6 to 8 feet). To-day the yearlings are much larger than the two-year-olds.—FRED L. POST, Chelan County.

WEST VIRGINIA. One-year trees, first, last, and all the time here for us—two-year about knocked out except in small lots to people who do not know reasons. About 1884, I planted an orchard of about three acres. I was scarce of money and bought about four dozen one-year trees, one dozen each of three different kinds. In a few years the ones were ahead of the twos and were all uniform in size and shape. Not so with the twos. About two-tenths of the twos had something wrong with them. The one-year, less in freight, easier to plant, can be headed to suit, grows better, etc. I have about 150 sorts that have been bearing from six to thirty (most of them twenty) years.—C. S. SCOTT, Monroe Co.



A one-year Stark Delicious tree, three years from planting. The picture tells the story of vigorous, healthy growth and early and abundant bearing.

Field Investigations in Pomology

RECEIVED

JAN 26 1913

Answered



One-Year Apple Trees

as we grow them

(From a photograph showing the three sizes)

Stark Bro's Nurseries & Orchards Co.

Louisiana, Missouri

Special Service Department Bulletin No. 73

One-Year Apple Trees

FOR many years we have advocated the planting of one-year-old apple trees, experience and observation having proven to us conclusively that they are the best. In addition to the orchards that have come under our eyes, we have kept in touch with orchardists and Experiment Stations in nearly every state in the Union and these practical men are almost as one in their positive statements that one-year-old trees are a better orchard foundation than an older tree.

In the first place, one-year apple trees cost the planter less, are cheaper to plant and the loss the first season is much less.

A one-year-old tree stands the shock of transplanting from the nursery row to its permanent home in the orchard much better than an older tree. There are no extra large roots to be cut off in digging—instead, nearly all the smaller and fibrous roots remain, take hold of the soil quickly and start growth at once.

One of the strongest arguments for the planting of one-year-old apple trees is that the tree can be headed just exactly as it should be. In other words the limbs that are to form the framework of the tree can be allowed to grow just the right height from the ground and just the right number of limbs can be left—all other buds are rubbed off and the strength thrown into the ones you want to grow.

One-year-old trees will come into bearing just as quickly as older trees planted at the same time and experience has proven conclusively will make longer-lived orchard trees.

We quote from a few of the best authorities in the United States:

Careful, Conservative Opinion of a Man of Wide Experience.

Some years ago the Experiment Station sent out 2,500 circular letters to Missouri orchardists asking for their experience in planting one-year-old trees. About one-fourth of them said unconditionally they would prefer to plant one-year-old trees. Nearly all of the three-fourths who said they would prefer two-year-olds made this statement conditional. Many of them said they would prefer one-year-old trees provided they could get large one-year-olds. The sum total of their reports indicated that if the one-year-old trees were large and well grown they gave results superior to two-year-olds. In our own experience at the Experiment Station, we prefer one-year-old trees, provided we can get them well grown and 4 feet or upwards in height. If one-year-olds are less than 3 feet in height, we would prefer two-year-old trees. The one-year-old trees can be headed at any height which the planter desires. They can subsequently be pruned and shaped at the will of the planter without interfering with a framework which has previously been formed in the nursery. They can be handled and planted with much less labor. They occasionally wilt less, and are far less liable to lean or to have their roots loosened in wet, windy times than are the bigger two-year-olds. They can more readily be cultivated close the first year without barking limbs already formed. Two-year-olds well branched when shipped are likely to have their branches more or less broken in handling, even though the best care is taken in packing, shipping and planting. With one-year-olds there is no such danger. On well-grown one-year-olds a better root system can always be secured in proportion to the tree. It is largely because under neglect the one-year-old is more likely to be overgrown by weeds or too much shaded by corn or other crops, if the latter are planted too close to the tree. In no case, however, should weeds be allowed to grow around the trees the first year nor should corn be planted close enough to shade one-year-old trees. I do not think a two-year-old tree should be chosen simply because it is big enough to

better avoid being over-topped by weeds or encroaching crops. It is our belief here at the Station that the one-year-old tree is the better, more economical, and the safe tree to plant.—J. C. Whitten, Professor of Horticulture, University of Missouri.

Opinion of a Widely Known Authority.

During a recent trip through the far West I saw thousands of apple orchards and in nearly every case they were grown from one-year-old trees. The growers seem to prefer them and I do not wonder at it when I see the orchards. The fruit at the Third National Apple Show, where I am now, judging the exhibits, is abundant evidence of the success of such trees when grown to bearing age. They surely live well and make thrifty trees. The cost of the original tree is less than that of a two-year-old and the freight and cost of planting are less. Thrifty, stocky one-year-olds are what the western growers plant, and they should be planted far more commonly in the East.—H. E. Van Deman, Ex-U. S. Pomologist.

Opinion of a Noted Horticultural Author.

Naturally, I am very much in favor of yearling trees but it seems to be difficult to get them in Ohio. There is no question but what they are the best trees to plant when well grown. I am sure that the same arguments for the planting of one-year trees in all portions of the West will hold good in Ohio, the principal one being that the future framework of the tree may be placed exactly where the grower wishes it. With older trees this is quite impossible; many broken mature trees result from using a head that is formed in the nursery when trees are older than one-year. I am certainly very much in favor of using yearling trees of all kinds.—Wendell Paddock, Columbus, Ohio. (Author "Fruit Growing in Arid Regions" and Professor of Horticulture, Ohio State University.)

Mo. Hort. Board Sec'y Believes in One-Year Trees.

I believe that one-year-old trees could be used universally with greater success than two-year-olds. I should certainly use one-year trees, provided I could get them of good size—say from 3 to 4 feet in height. I believe the average workman who is planting trees would get one-year-olds in the ground in much better condition than the larger two-year-olds. It is difficult to get them in and properly protect the roots of two-year-old trees while planting, but I found where smaller trees are being handled the men do not mind scraping away the loose earth with a foot and dragging some soil over the roots of the trees during the time which intervenes while the hole is being dug and made ready for receiving the tree. Where it is necessary to use the shovel for heeling in trees where they are to be protected only for a few minutes, the heeling in will not be done. Every experienced orchardist knows the value of protecting the roots of trees when they are being planted, and anything we can do to encourage this needed protection will increase the percentage of trees that live and do well.

There was a time when people argued in favor of two-year-old trees because they were more conspicuous and easier seen after being planted, and hence were not so liable to be injured in cultivating the orchard. To-day, we expect to get our orchard lands in good enough order before setting any trees to enable us to plant any size we like and still be able to see them while cultivating. By using one-year-old trees, there would be great saving in freight charges and large numbers of trees could be handled between the station and the orchard with greater ease. I am willing to advocate the planting of strong, vigorous, one-year-old apple trees.—W. L. Howard, Ex-Secretary State Board of Horticulture, and Professor of Horticulture, Missouri State University.

One-Year Trees Resist Heavy Winds—a New York Opinion.

The sentiment which years ago favored "sky scraper" style of apple trees is changing wonderfully fast, and the prevailing sentiment to-day is for one-year trees—the heads of which can be controlled and made to resist sweeping winds. My own observation and experience have taught the wisdom of the adoption of this course in all future plantings.—S. D. Willard, Geneva, N. Y.

One-Year Trees Bear as Early as Two-Year—Md. Experiment Station.

I most certainly favor planting one-year-old apple trees, so that they may be headed low and all orchard operations may be easily performed. I find that one-year-old trees will bear as early in the orchard as trees two or three years old when planted. Under separate cover, I am sending you my bulletin on apple culture, which gives my reasons in better form than I am giving them in this letter.—C. P. Close (State Horticultural Exp. Station College Park, Md.)

(We quote in full from the Maryland Agricultural Experiment Station Bulletin No. 144, written by Mr. Close, the matter on one-year apple trees and which appears under the heading "Age and Kind of Nursery Tree for Planting.")

"The writer prefers above all others a well-grown one-year-old tree. A one-year-old tree may be headed low and the first crop of branches may be used for the foundation branches, selecting those best placed. Nurserymen usually cut these off in growing higher-headed trees. Unless a two-year-old tree has been headed low in the nursery it is usually necessary to force the development of new foundation branches low on the trunk and these are not always well placed. Furthermore, a one-year-old tree is cheaper than a two-year-old tree."

What the Peach King of America Thinks.

You are right in educating people to plant one-year apple trees. I have advocated it for years. One gets better root system in a one-year tree than at any other age and the public will not pay the nurseryman for the extra work involved. With the general tendency to lower headed trees, there are many different views as to form and shape of tree to be desired; then different orchard locations require somewhat different types of trees, and the planter who has the good sense to buy one-year trees can rear and build up a far more suitable tree for his purpose than would be possible with the older nursery. One-year trees pack together, arrive in better order, and at less freight and express cost to planter; they sell for less money, and so the planter can afford to buy a few more than he wants, and by planting the surplus in missing rows, 3 to 5 feet apart and transplanting each year, he always has stock on hand to replace any failure in the orchard, right Johnnie on the spot, and that's a big point in successful orcharding.—J. H. Hale, South Glastonbury, Conn.

What the U. S. Pomologist Says—90 Per Cent Now Planted Are One-Year Trees.

I fully agree with you in regard to planting one-year-old trees. In answering the many inquiries on the subject received at this office, my advice is always in favor of the one-year tree, especially if stock is well grown and on sound, healthy roots. Fully 90 per cent of all apple trees now planted for commercial purposes are of this age. The low-headed tree is now almost universally preferred and the one-year-old tree affords the best conditions for forming such heads. The shock in transplanting is much less than in older trees and the ease and facility of handling and cost of trees and transportation are important items. From observation and experience, I am decidedly in favor of one-year-old trees.—G. B. Brackett, U. S. Pomologist.

Heads Coming Down—Tardy Bearers Bear Early.

I favor the use of young trees in establishing orchards and believe in good, well-grown, one-year-old apple. I believe in low-headed trees, and the best way to get them is to plant young trees and head at the height you desire. Years ago, in the East, we planted trees with heads five and six feet high. Fortunately, we are getting over that habit, and the heads are coming down, consequently, we are getting fruit from the so-called tardy bearers, like Spy, Greening and Baldwin, much earlier than was formerly thought possible. I am therefore heartily in favor of young trees for promoting a lower-headed system of orcharding.—Prof. John Craig, Cornell University, Ithaca, New York.

Heavy One-Year Trees Wanted by Iowa Exp. Sta. Head.

In the hands of experienced planters one-year apple trees, good, heavy specimens, are the best to plant; they enable him to start the top himself, and in a prairie country a tree that is without branches is less whipped about by the wind at transplanting time. For these sections I think this is quite a point in favor of the whip tree.—Prof. A. T. Erwin, Iowa Experiment Station.

Prof. Thorner, Idaho Horticulturist, Prefers One-Year Trees.

For several years we have been recommending the planting of one-year-old apple trees in preference to any thing else that we could secure, for the reason that the small trees seem to suffer less than the older ones. In our extensive planting here in the Lewiston Orchards we invariably use one-year-old trees to start. I think it is a safe tree for the average orchardist.—W. S. Thorner, Director Lewiston-Clarkston School of Horticulture, Lewiston, Idaho.

From a Kansas University Bulletin.

The comparative value of one-year-old and two-year-old trees for setting in the orchard is one that good growers have discussed for years. The facts seem to be that the one-year tree is somewhat easier to plant and has somewhat greater chance of living.—Albert Dickins, Prof. of Hort., Kansas State Agri. College.

Dean of California University Speaks.

Experience clearly proves that in California a well-grown one-year-old apple tree is altogether superior for transplanting to a tree of greater age.—E. J. Wickson, Dean Calif. College of Agriculture.

One-Year Trees Produce Best Orchards.

I am quite certain that one-year-old stock, at the end of five years, will produce trees equal to those grown under any circumstances or conditions. With one-year-old stock you have the advantage of being able to start the top at whatever point you desire.—E. C. Leedy, General Immigration Agent, Great Northern Railway.

Come into Bearing Just as Early.

Very much favor planting one-year apple trees instead of two-year-old, for the reason that if I have one-year-old trees, I can prune them exactly as I want to; trees are cheaper; larger percentage will grow; expense of getting them is less and they come into bearing just as soon as two-year-old trees. They seem to recover more quickly from the shock of transplanting, and are better in every way.—H. J. Eustace, Mich. Agr. College.

From Orchardists.

One-year trees for this country.—Geo. W. Triplov, Snake River Valley, Montana.

I find that the one-year trees have made a better growth than the larger trees planted at the same time.—Shepherd Young, Vanderburg County, Indiana.

In planting a large tract, I would only plant one-year-old apple trees and never more than two-year-olds.—John Miller, Ravalli County, Montana.

Would not plant trees older than one year; have one-year trees planted in 1905 as large now as two-year trees planted in 1903.—H. C. Thompson, Kootenai County, Idaho.

I think one-year trees are decidedly the best, but as with all others they need careful setting and cultivation. One-year trees for me, first, last and all the time.—R. H. Pickel, Knox County, Indiana.

For large plantings I prefer one-year trees—they are so much easier handled. In this valley one-year trees take hold and grow just as readily as two-year trees.—Arch McGregor, Grant County, New Mexico.

With my experience I am in favor of one-year trees rather than two-year or three-year trees. In my own orchard one-year trees have done much better than two-year.—Philip Shade, Frederick County, Virginia.

I believe it is the judgment of all leading growers of the Northwest that one-year trees are best. Where trees have to be shipped, I would not buy or set anything but yearling trees.—H. D. Hall, Chelan County, Washington.

I prefer good, thrifty one-year-old. If the body of a yearling is thrifty and smooth, it will, in five years, be larger and bear more than nine-tenths of the two-year-old trees.—I. F. Davis, Flathead County, Montana.

I spent most of my life near the great nursery district of New York, where the two-year-old apple tree was the only standard tree to plant, but I believe a good strong one-year-old tree is the only thing.—T. R. Plumb, Carbon County, Montana.

I always prefer one-year-old trees in all varieties—they are easier to train to suit one's convenience and they apparently make a better start and in four years' time the one-year trees most frequently have outgrown the two-year-olds.—Theodore Polling, Delta County, Colorado.

Last April I purchased from you six hundred of the most perfect one-year-old trees I have ever seen; set them out the 19th of April and never lost a tree. I headed my trees back to 22 inches and this year got a growth of from 3 to 5 feet.—R. W. Martin, Mitchell County, North Carolina.

I prefer the very best grade of one-year trees to two-year olds. We can get a better stand of trees, and can also form the heads where they should be, which for commercial orchards should be lower than they are on the usual two-year-old nursery tree.—R. M. Love, Eddy County, New Mexico.

I much prefer one-year trees. They can be headed to suit the grower; losses in transportation are small, no limbs rubbed and scarred in transit. At the end of five years you have as large a tree, and I am sure a better one, than an older tree would make.—Henry Buck, Ravalli County, Montana.

I advocate planting one-year trees and my experience is that Stark Bro's trees have the best root system of any trees coming in here. You are, without doubt, the best propagators, have the best system, methods and facilities. No nurseries in irrigated valleys can compete with your Missouri conditions for producing good stock.—Hon. Silas Wilson, Canyon County, Idaho.

Advise everyone to set one-year-old trees, no matter how small. Two years ago Stark Bro's sent me two-year-old trees, including without charge quite a bunch of under-size yearlings from 12 to 16 inches in height. (The two-year-olds were 6-8 ft.) Many two-year-olds died; every yearling lived. Today the yearlings are much larger than the two-year-olds.—Fred L. Post, Chelan County, Wash.

I have set both one and two-year trees, and consider one-year far superior to two-year, especially for the southwest, and more especially New Mexico. I set trees from you two years ago and the seasons have been dry ever since they were set out, and there are 95 per cent. of them living. Under the conditions, I couldn't have expected any of them to live. I can recommend your trees to all who contemplate setting an orchard.—E. A. Hyso, Quay County, New Mexico.

One-year trees are coming into favor. They make a tree just as quickly. One advantage is they can be headed to suit the grower. We head our trees low and try to have branches come nearly to the ground. This protects the tree, kills the grass and renders much cultivation or mulching unnecessary. This we regard as of the greatest importance.—J. W. Garber, Prop. Alta Vista Fruit Farm, Richland County, Ohio.

My experience with one and two-year-old trees has been quite extensive, having experimented with them often, and find that one-year-old trees, if good root system, have proven to be far better; however, I have had very good success with two-year-old trees, if well rooted. Root system to start with and then properly planted is my motto.—R. P. Wright, Chelan County, Washington.

The practice in the inter-mountain states is more and more to use well grown one-year-old apple stock. I believe that better results are being secured in this way. I am not, however, wholly satisfied that one-year-old trees are the better for the higher altitudes where the seasons are short and the conditions rather severe. The stronger root system of the two-year-old trees seems to have better results, in many instances at least.—Aven Nelson, Albany County, Wyoming.

The first-class one-year tree is the best foundation for an orchard; trees are taken out of nursery and handled with much less injury to the root system. A great many trees grown two years in the nursery row are bound to have more or less unbalanced heads which require a great amount of pruning to correct which often ruins the tree. One-year trees, properly planted and cared for, will come into bearing fully as early as the two-year trees.—L. B. Fitzgerald, McIntosh County, Oklahoma.

One-year trees, first, last and all the time here for us—two-year had knocked out except in small lots to people who do not know reasons. About 1884, I planted an orchard of about three acres. I was scarce of money and bought about four dozen one-year trees, one dozen each of three different kinds. In a few years the ones were ahead of the twos and were all uniform in size and shape. Not so with the twos. About two-tenths of the twos had something wrong with them. The one-year, less in freight, easier to plant, can be headed to suit, grows better, etc. I have about 150 sorts that have been bearing from six to thirty (most of them twenty) years.—C. S. Scott, Monroe County, West Virginia.

I much prefer one-year-old trees in orchard work unless I can take up two-year-old and set them out the same day. but in having trees shipped in from a distance, I much prefer the yearlings. When I set trees of both ages I could see a difference in size for a few years but now, and for several years past, no difference either in size or fruitfulness is discernible. A young tree stands the shock of removing much better than an older tree. My advice to planters is, always buy the year-old trees unless you can both dig and set the tree yourself. A transplanted tree ordinarily does not grow very much the first year and the older the tree, the slower it is in starting into a good healthy growth.—F. Walden, King County, Washington.

Stark One-Year Apple.

Our one-year apple trees are famous throughout the orchard planting world. They are grown in the best apple nursery soil in the United States selected, after exhaustive study and experiment, by our soil experts. In our propagation strong No. 1 French and American seedlings are used, scions carefully selected from vigorous, healthy trees, bearing select strains of fruit, and the finished product is just what the careful, exacting planter wants.

We wish every man who is expecting to plant an orchard could visit our nurseries and see for himself the wonderfully fine trees we offer. We are always glad to have buyers come to our packing houses and accept their trees—examine every one of them as they go into the box. No secrets here.

We are one-year-apple specialists, and the trees we grow in the Ozark country—strong, healthy, vigorous, dependable and an incomparable root system—are the wonder and admiration of all visiting orchardists and nurserymen.

Complimentary Sample One-Year Apple Trees

FOR one dollar and fifty cents (\$1.50) to cover the cost of packing and filling your order, we will send you by express (express charges to be paid by you) ten (10) splendid, first-class one-year-old apple trees, size 3 to 5 feet, of any one of the following five varieties:—

Jonathan
Stayman Winesap
Black Ben

Grimes Golden
Winesap

} NOTE. On this special offer we cannot send you an assortment of these five varieties; your order must be for ten trees of just one of these varieties.

We will also include in the shipment without further cost to you, ten (10) fine, well-rooted, two-year-old grape vines—five (5) vines each of Niagara and Worden. These grape vines are from our branch grape nursery at Girard, Pa., which is in the very heart of the Chautauqua-Lake Erie Grape Belt, where the finest grape vines in the world are produced.

Remember, \$1.50 pays for the ten trees and the ten vines.

This Special Offer is Made

that you may see with your own eyes a fair sample of the magnificent one-year apple trees as we grow them and that you may test to your own satisfaction the genuine value of the one-year tree as compared with older trees—to prove to yourself that one-year trees are the ideal trees to form the best foundation for the commercial or home orchard.

The trees and vines here offered are in every way fully up to the Stark standard of tree excellence—strong, healthy, thrifty, well-rooted stock that will please you and your neighbors.

Cash must accompany order. Simply fill in coupon, pin remittance to it and mail to us. You will be happily surprised when the shipment reaches you.

Description of Varieties

JONATHAN. A brilliant, dark red apple of high flavor and excellent quality; an A-1 family sort and unusually profitable when planted commercially. Tree bears early, is long-lived and productive. Succeeds wherever an apple tree will grow. A great favorite with growers everywhere and is much sought after by the market. You will like Jonathan—it is a great apple.

STAYMAN WINESAP. Best of all the Winesap family—a beautiful dark red apple of surpassing quality that succeeds everywhere and pleases everyone. Tree is a strong grower, a heavy and regular bearer and the fruit keeps well. One of the very best apples grown; we unhesitatingly recommend it.

BLACK BEN. The greatest money-maker and the apple that has driven old Ben Davis off the horticultural map. One of the most beautiful apples grown, solid, deep, dark red; succeeds wherever apples can be grown, is hardy, a heavy and annual bearer, and the fruit always commands profitable prices. Not high in quality like Stayman, Jonathan or Grimes Golden but a great commercial apple that is being planted by the tens of thousands. For a market apple Black Ben will surely please you.

GRIMES GOLDEN. A rich golden-yellow apple; juicy, spicy and very rich; size, medium to large. Splendid dessert quality and a great cooker; one of the most popular of all yellow apples and always sells at highest prices. Succeeds in all apple-growing regions.

WINESAP. The old Winesap that everyone knows and likes; a firm, crisp, dark red apple with a rich, pleasing flavor. Tree is hardy and a regular cropper.

WORDEN. A thoroughly tested, dependable, and valuable black grape. Commercially it is profitable; for the family vineyard it should be planted instead of Concord as it has higher quality and is hardier. Has a habit of bearing its best crops in the off-seasons for Concord.

NIAGARA. A hardy white grape that succeeds almost everywhere. Bunch is large and very handsome, and when fully ripe is melting and sweet, with a flavor and aroma peculiarly its own.

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COUPON

Stark Bro's Nurseries & Orchards Co.
Louisiana, Missouri

I enclose \$1.50, for which please ship me in time for spring planting 10 one-year _____ apple trees, size 3 to 5 feet and 10 two-year grape vines (5 vines each of Niagara and Worden). I will pay the express charges.

Name _____

Shipping point _____

County _____ State _____

Postoffice address _____
(If different from shipping point)

Ship by _____ Express line _____

I expect to plant _____ trees about _____ 191 _____
Number Date

How about your friends and neighbors?

They would like to know about this special one-year tree offer and you can make it possible for us to get in touch with them by sending us their names and addresses. Here are blank lines for you to write them on. We will be grateful for the favor.